LISTING OF THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A method of catalyzing an enantioselective oxidation reaction of an oxidizable, chiral organic compound composed of a racemic mixture of a first enantiomer and a second enantiomer, comprising:

a) contacting the organic compound with:

i) an oxidizing agent, and

ii) a catalyst comprising a palladium composition and a selected enantiomer of a chiral ligand containing two or more tertiary nitrogen atoms that are separated by two or more linking atoms, thereby

b) selectively oxidizing the first enantiomer of the organic compound so as to produce (i) an oxidized organic compound and (ii) a mixture of the first and second enantiomers in which the second enantiomer represents at least 50% of the mixture.

2. (original) The method of Claim 1 wherein the organic compound is selected from the group consisting of alcohols, thiols, amines and phosphines.

3. (original) The method of Claim 1 wherein the oxidizing agent is selected from the group consisting of molecular oxygen, benzoquinone, Cu (I) salts, and Cu (II) salts.

4. (original) The method of Claim 3 wherein the oxidizing agent is molecular oxygen.

5. (original) The method of Claim 1 wherein the oxidizing agent is used in a stoichiometric amount.

6. (previously presented) The method of Claim 1 wherein said contacting is conducted in an organic solvent.

7. (canceled)

8. (previously presented) The method of Claim 1 wherein the palladium composition is a palladium (II) complex.

9. (original) The method of Claim 8 wherein the palladium (II) complex is selected from the group consisting of $Pd(OAc)_2$, $Pd_2(dibenzylideneacetone)_3$, $PdCl_2$, $Pd(CH_3CN_2)Cl_2$, $Pd(PhCN_2)Cl_2$, $[(allyl)PdCl]_2$, $PdCl_2$ (cyclooctadiene), $Pd(OCOCF_3)$, and $Pd(norbornadiene)Cl_2$.

10. (canceled)

11. (canceled)

12. (previously presented) The method of Claim 1 where the second enantiomer represents at least 60% of the mixture.

13. (previously presented) The method of Claim 12 where the second enantiomer represents at least 90% of the mixture.

14. (canceled)

15. (canceled)

16. (canceled)

17. (previously presented) The method of Claim 1 wherein the organic compound is a secondary alcohol.

18. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is an enantioselective Wacker-type cyclization reaction.

19. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is an enantioselective aromatic oxidation reaction.

20. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is the enantio-group differentiation of meso diols.

21. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is an enantioselective oxidative [*4+2*] cycloaddition reaction.

22. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is a C-C bond forming cyclization reaction.

23. (original) The method of Claim 1 wherein the enantioselective oxidation reaction is a cyclization reaction.

24. (original) The method of Claim 23 wherein the organic compound contains an olefin tethered to a nucleophilic atom.

25-42. (canceled)

43. (previously presented) The method of Claim 1 wherein the chiral ligand has the structure

$$R^aR^aN\text{-}CR^bR^b\text{-}(X)_n\text{-}CR^bR^b\text{-}NR^aR^a$$

wherein:

each R^a is independently selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, heteroaryl and silyl;

X is $-CR^bR^b-$ or a heteroatom;

n is an integer from 0-2; and

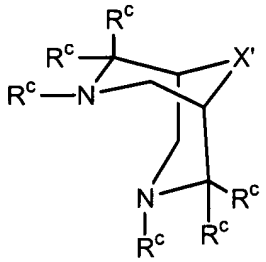
each R^b is independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, cycloheteroalkyl, aryl, heteroaryl and silyl,

wherein two or more of R^a and R^b can be taken together to form one or more cyclic structures.

44. (previously presented) The method of Claim 43 wherein n is 1 or 2.

45. (previously presented) The method of Claim 43 wherein the chiral ligand is tetracyclic.

46. (previously presented) The method of Claim 1 wherein the chiral ligand has the structure



wherein: each R^c is independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, cycloheteroalkyl, aryl, heteroaryl and silyl, with the proviso that the R^c substituents bound to the nitrogen atoms are other than hydrogen; and X' is selected from the group consisting of -O-, -S-, $-N(R^d)-$, $-C(R^d)_2-$, in which each R^d is independently selected from the

group consisting of hydrogen, alkyl, cycloalkyl, cycloheteroalkyl, aryl, heteroaryl and silyl, wherein two or more of R^c and R^d can be taken together to form one or more cyclic structures.

47. (currently amended) The method of Claim 46 wherein X' is [[is]] $-C(R^d)_2-$.

48. (previously presented) The method of claim 43 wherein R^a and R^b are independently selected from the group consisting of branched, unbranched, and cyclic C_1-C_{24} alkyl optionally substituted with at least one substituent.

49. (previously presented) The method of Claim 48, wherein the at least one substituent is selected from hydroxyl, cyano, alkoxy, =O, =S, nitro, halogen, haloalkyl, heteroalkyl, amino, and sulfhydryl.

50. (previously presented) The method of Claim 48 wherein R^a and R^b are independently selected from the group consisting of branched, unbranched, and cyclic C_1-C_6 alkyl optionally substituted with at least one substituent.

51. (previously presented) The method of Claim 50 wherein the at least one substituent is selected from hydroxyl, cyano, alkoxy, =O, =S, nitro, halogen, haloalkyl, heteroalkyl, amino, and sulfhydryl.

52. (previously presented) The method of Claim 1 wherein the chiral ligand is (-)-sparteine.